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GENERAL STUDIES (TEST CODE : 2420)

Name of Candidate	DEEPAK GUPTA		
Medium Eng./Hindi	ENGLISH	Registration Number	720807
Center	ORN	Date	16/08/23

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

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All the Best

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(इस भाग में कुछ ना लिखें)

1. भारत में राज्यों की राजकोषीय स्थिरता से संबंधित मौजूदा मुद्दों का परीक्षण कीजिए। इन मुद्दों के समाधान हेतु किन उपायों की आवश्यकता है?

Examine the persisting issues related to fiscal stability of states in India. What measures are needed to address these issues? (Answer in 150 words) 10

Recent report by RBI on state finances has shown that states have a fiscal deficit of more than 4%.

Issues persisting to fiscal stability

→ Low availability of funds with states leading to borrowing and debt burden.

→ Delay in release of funds by centre to states.

eg Many states have made allegations on centre for delay in releasing funds

→ Increase in cess and surcharge by centre and decrease in funds to states

eg 15th FC have reported that cess and surcharge have doubled since 2010.

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→ Huge responsibility on state such as health, agriculture, etc. leads to fiscal instability.

→ Freebies given by government (eg) Punjab in loss due to electricity freebies.

Measures needed to address

→ Early release of funds by centre.

→ Share in cess and surcharge to states (15th FC)

→ State needs to focus on creating infrastructure to attract business.

→ Proper implementation of taxing powers

Many steps such as allowing 3.5% of GSDP as fiscal deficit, 50 year interest free loan, etc. have been taken for fiscal stability in states

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2. उत्पादन से संबद्ध प्रोत्साहन (PLI) योजना आत्मनिर्भर भारत के लक्ष्य की प्राप्ति हेतु सरकार की प्रकार सहायता कर सकती है? इसके उद्देश्यों को प्राप्त करने में आने वाली चुनौतियों क्या है?
How can the Production Linked Incentive (PLI) Scheme help in achieving an Atmanirbhar Bharat? What are the challenges in realizing its objectives? (Answer in 150 words) 10

Production Linked Incentive (PLI) scheme is introduced to which will give incentives to companies based on their increased production. This is introduced to more than 15 sectors

PLI leading to Atmanirbhar Bharat

- Attract industries to set up business in India.
- Increase production will lead to increase exports from India.
- Incentive give will help in promoting economies of scale leading to increased competitiveness.

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Challenges :

→ Huge logistics cost in India of 14% of GDP vis-a-vis 8% in USA

→ Infrastructure bottlenecks discouraging exports.

→ Power blackouts leading to decrease in production

→ Inverted duty structure on products.

Measures taken → Sagarmala and Bharatmala

→ National Logistics Policy for reducing cost

→ Delhi-Mumbai Industrial Corridors, etc

India has taken many steps to achieve the goal of Atmanirbhar Bharat & New and developed India by 2047.

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3. जलवायु परिवर्तन में वृद्धि से मोटे अनाज की खेती का पुनरुद्धार किस प्रकार हो रहा है? भारत में मोटे अनाज के उत्पादन को बढ़ावा देने के लिए सरकार द्वारा क्या कदम उठाए गए हैं?

How is the advent of climate change leading to the revival of cultivation of millets? What steps have been taken by the government to give an impetus to millet production in India? (Answer in 150 words) 10

International Food Policy Research Institute has highlighted the importance of ~~drought~~ cultivation of crops such as millets, etc. to cope up with climate change.

Climate change leading to ~~revival~~ of cultivation of millets :-

→ Declining availability of water..

eg At 2% increase in temperature, 20% decline in water for irrigation (IPCC)

→ Decreasing productivity of crops such as ~~crops~~ rice, wheat, etc.

→ Increase in heat waves across the world.

eg Heatwaves in Europe, India

→ 1

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Millet being a dry crops will help in coping with all these challenges :-

- Requires less water for irrigation
- Can withstand higher temperature.
- Has high nutritional value.

eg: Project Teshaswini in Madhya Pradesh.

Steps taken by India are :-

- Efforts in pursuading UN for declaration of International Year of Millets
- Budget 2023-24 : Shree Anna, Many institute such as Hyderabad for increasing awareness
- Promotion at various levels by government.
- Increase in research to increase production by ICAR.

India has initiated various initiatives for millet production which will help in reducing vulnerability and promote Milletpreneurs for doubling farmer's income.

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4. चारे की खराब गुणवत्ता और उसकी अपर्याप्त उपलब्धता भारत में पशुधन की कम उत्पादकता के लिए उत्तरदायी प्रमुख कारण हैं। चर्चा कीजिए।

Poor quality and inadequate availability of feeds and fodder are the major reasons behind the low productivity of the livestock in India. Discuss. (Answer in 150 words) 10

According to Ministry of Fisheries, livestock sector contributes to around 5% of GDP with employment to many people.

Poor quality and inadequate availability of feeds and fodder leading to low productivity:-

→ Poor quality leads to increase vulnerability to disease of livestocks.

→ It creates the problem of poor production.

eg Indian sheep produces just 0.49 kg/annum vis-a-vis Australian sheep = 4 kg/annum.

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→ Inadequate availability leads to rise in price which may not be feasible to poor farmers

→ Steps to overcome the issues of low productivity :

- Ensuring availability to quality feed and fodder
- Increasing the credit availability to small farmers to buy feeds and fodder
- Animal insurance to farmers.

India has taken steps such as National Livestock Mission for overcoming the issues of feed and fodder to increase the productivity of livestock ~~stock~~ sector

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5. एकीकृत कीट प्रबंधन (IPM) क्या है? IPM के उद्देश्यों पर प्रकाश डालते हुए, इसके विभिन्न घटकों पर चर्चा कीजिए।
What is Integrated Pest Management (IPM)? State its objectives and discuss its various components. (Answer in 150 words) 10

Integrated Pest Management is the process of managing pest issues hollistically for decreasing vulnerability of crops.

Objectives → To reduce the threats of pest attack

→ To provide farmers knowledge and information about sustainable management of pest.

→ To cope up with increasing attack due to climate change

→ Fostering research on pest management

Components

→

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6. आपदा जोखिम न्यूनीकरण में अन्तर्राष्ट्रीय सहयोग के महत्व की व्याख्या कीजिए। भारत ने आपदाओं को कम करने के लिए क्षेत्रीय सहयोग को मजबूत करने के लिए क्या पहल की है?

Explain the significance of international cooperation in disaster risk reduction. What initiatives has India taken to strengthen regional cooperation for reducing disasters? (Answer in 150 words) 10

Sendai Framework for Disaster risk reduction (DRR 2015-30) highlights the significance of International cooperation in DRR.

Significance of International Cooperation:

→ Helps in bridging the fund crunch with small and poor countries.

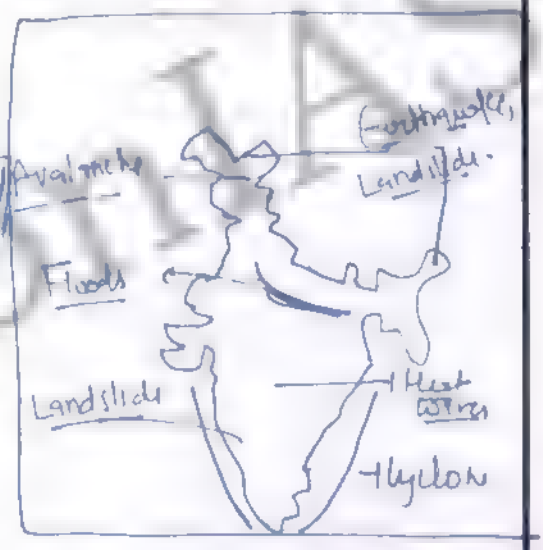

Fig. Disaster vulnerability of India

→ Increases the early warning system prediction with technology availability

Eg Tsunami Prediction in Indian Ocean.

→ Better post-disaster rehabilitation.

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Eg India's provided help to Turkiye during earthquakes → ~~Cyclone~~ Operation DOST.

→ Better hazard zonation mapping.

Eg NISAR project of ISRO & NASA

Initiatives by India:-

→ ~~Launch~~ Launched Coalition for Disaster Resilient Infrastructure for countries in Indian Ocean.

→ Flood management agreement with countries such as Nepal, Bangladesh, etc.

→ Cooperation with countries of Indian Ocean on Cyclone management

→ Launched Disaster Resilience Group as G20 Chair

With the changing climate, disasters will increase, the global community needs to act together for the value of Vasudhaiv Kutumkam (ONE EARTH ONE FAMILY ONE FUTURE)

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7. अत्यधिक और अविवेकपूर्ण रेत खनन की पारिस्थितिक लागत इसके आर्थिक लाभों से कहीं अधिक है। संधारणीय रेत खनन के महत्व के संदर्भ में चर्चा कीजिए।

The ecological cost of excessive and indiscriminate sand mining far outweighs its economic benefits. Discuss in context of the importance of sustainable sand mining. (Answer in 150 words) 10

According to UNEP, India is among the top-2 countries in sand mining related environmental degradation.

Consequences of Indiscriminate sand mining :-

Ecological → Degradation of ecosystem due to damage to species.

→ Leads to loss of species.

Eg ① Ganga Dolphin facing extinction crises due to sand-mining.

② Narmada Basin has lost Mahseer fish by 76% since 1984.

→ Impacts ecological flow of rivers creating problems to riverine ecosystem.

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→ Increasing vulnerability to disasters as sands acts as shock-absorber

Sustainable sand ~~mind~~ mining can help in overcoming these issue such as:-

↳ It will promote sand mining to the capacity of river.

↳ Helps in better regulation.

↳ Minimise damage to ecosystem

↳ Provides revenue for re-storation

India has taken steps such as creation of 'NO-GO' areas of mining, a National Mission for sustainable mining, etc. for realising the aim of ecosystem restoration and sustainable development

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8. थिएटराइजेशन योजनाओं के पीछे निहित तर्क पर चर्चा कीजिए, जो भारत में रक्षा बलों को विशिष्ट थिएटर कमांड में एकीकृत करना है। इससे जुड़ी चुनौतियां क्या हैं?

Discuss the rationale behind theaterisation plans, which seek to integrate the defence forces into specific theatre commands in India. What are the associated challenges? (Answer in 150 words) 10

Theatre commands is the integration of all three forces i.e., Army, Airforce, Navy for specific region (theatre) for better management of threats.,

eg Eastern Theatre Command, Western theatre command.

Rationale behind theaterisation plans:-

→ For tackling the challenges at border eg Threat of Two-front war

→ For better coordination among the tri-services at the time of need.

→ For creating a single line of command between the all the chiefs of army and CDS and Defence ministry.

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→ Challenges → ~~T~~ lack of single operator between the tri-services

Eg All three operate on different platform

→ Issue of division of assets of tri-services

→ Challenges such as Who will report to whom? at time of emergency.

→ Threat of conflict between the personnel of tri-services.

India has taking the integration of tri-services for national security reasons but needs to overcome the challenges through proper dialogue, etc.

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9. व्याख्या कीजिए कि धन शोधन (मनी लॉन्ड्रिंग) के लिए शेल कंपनियों का उपयोग कैसे किया जाता है। भारत में धन शोधन के लिए शेल कंपनियों के उपयोग को रोकने के लिए क्या कदम उठाए गए हैं?

Describe how shell companies are used for money laundering. What steps have been taken to curb the use of shell companies for money laundering in India? (Answer in 150 words) 10

Money laundering is the act of concealing and disguising the identity of proceeds to make it look that it had been obtained from legitimate source

Base Erosion and Profit Shifting ← Methods of Money Laundering → Shell Companies

Hawala

Shell companies are the companies which are established in tax havens and does not perform any activity as such.

They are used for money laundering by companies. When companies transfer money which they save by not paying tax

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to authorities to shell companies and then they invest this money in countries with the use of shell companies to make it look legitimate.

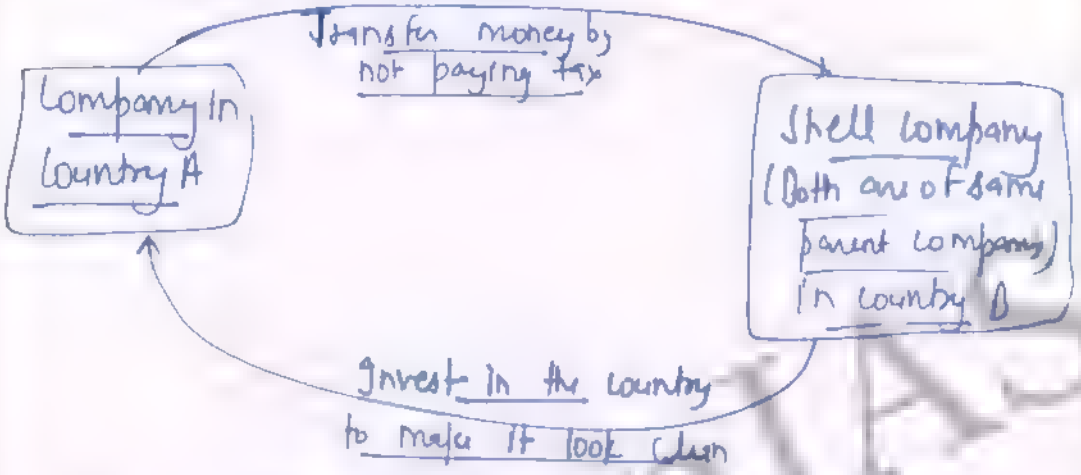

Fig. Money Laundering through shell companies

Steps taken:
- → Double taxation avoidance agreement with many countries
  - eg Mauritius, etc
- → Formation of Enforcement Directorate
- → Enacting Prevention of Money Laundering Act

India has taken various steps to curb the menace but more needs to done at global level for better coordination and cooperation.

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10. भारत ने हाल ही में अपना पहला जैविक डेटा केंद्र स्थापित किया है। इसके उद्देश्य और महत्व क्या हैं?

India has recently set up its first Biological Data Centre. What are its objectives and significance? (Answer in 150 words) 10

Recently, India set up its first Biological Data Centre in Faridabad, Haryana.

Objectives → To facilitate better management of data.

→ For boosting the culture of research in India.

→ For better security of data of citizens from disasters and non-state actors.

Significance → It will reduce duplication of research by providing access to data to researchers

→ Streamline the process by aligning all the

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research institutions at one place.

→ Helps in fastening the process of research by already available data.

→ Reduce cost of research work.

→ Make India global leader in research sector.

With the data centre and establishing National Research Foundation, India has taken a giant leap forward which will bore fruits in the long run.

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11. भारत में तीव्र शहरीकरण को देखते हुए, शहरी क्षेत्रों में पूंजी निवेश की बढ़ती मांग को पूरा करने के लिए म्युनिसिपल बॉण्ड्स का उपयोग करना आवश्यक हो गया है। चर्चा कीजिए।
In view of India's rapid urbanisation, it has become imperative to tap into municipal bonds to meet the rising demand of capital investment in urban areas. Discuss. (Answer in 250 words) 15

According to United Nation, 49 crore of India's population lives in Urban areas which is going to increase to 600 million by 2031 leading to increase in urban areas demanding increased investment.

It has become imperative to tap into municipal bonds due to :-

- Fund crunch with local bodies in urban areas.
- Low investment in urban infrastructure

eg: India spend $17 per capita in urban infrastructure vis-a-vis world average of $100

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→ Provide urban facilities to the increasing population.

eg According to World Bank, India needs 5.5bnUSD/year for urban facilities.

→ Low PPP in India → eg Only 3% through PPP

Municipal bonds can help in meeting the Housing demand :-

→ Provide the funds to local bodies from various sources.

eg Recently, Lucknow municipal commission launched its bond on BSE.

→ Help in bridging the fund gap which will lead to better infrastructure

→ To make cities smart, municipal bonds can reduce the shortage with local bodies.

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→ Provide low cost funds to urban local bodies.

→ For waste management and waste to energy, etc.

Along with urban municipal bonds, other steps for better urbanisation are:-

- Developing low cost housing for poor to reduce slums.
- Better management of urban disasters through Blue - Green infra structure.
- Providing ease of living and improving quality of life.

With India on the brink of urban revolution, steps such as Smart City, AMRUT, HRIDAY can help in achieving SDG 11: Inclusive and sustainable urbanisation

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12. भारत ने आर्थिक संवृद्धि, महिला शिक्षा और प्रजनन दर जैसे विभिन्न विकास मानदंडों पर महत्वपूर्ण प्रगति हासिल की है। हालांकि, देश की महिला श्रम बल भागीदारी दर (FLFPR) वैश्विक स्तर पर सबसे कम है। चर्चा कीजिए। भारत में FLFPR में सुधार के लिए कौन-से कदम उठाए जा सकते हैं?
India has achieved significant strides in various development parameters such as economic growth, women's education, and fertility rates. However, the country's Female Labour Force Participation Rate (FLFPR) remains amongst the lowest in the world. Discuss. What measures can be taken to improve the FLFPR in India? (Answer in 250 words) 15

As per recent Periodic Labour Force Survey (PLFS), India's FLFPR is at 32% with the world average of more than 40% despite significant efforts.

Significant strides in various parameters subha

- Economic growth ⇒ 5th largest economy in the world.
- Women's education ⇒ Recent AISHE, women's participation is more than man.
- Fertility rates ⇒ India's TFR has come down to 2.0 (NFHS-V)

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Still, FLFPR remain low due to:

Economic reasons:

→ Lack of opportunities for women.

(Eg) Recent Global gender index = 36% parity in opportunities and employment.

→ Wage ~~gay~~ gap between man and women

(Eg) Women are paid 35% less than man (WEF)

→ Glass Ceiling and Glass Cliff impacting women participation.

→ Poor skill development of women.

(Eg) Only 50% are employable (India Skills report 2023)

→ Lack of access to assets.

(Eg) Women holds 2% of total assets (UN-Women)

Social reasons

- Patriarchal mindset hinder participation of women
- Household responsibilities of women
- Sexual Harrasment at workplace.

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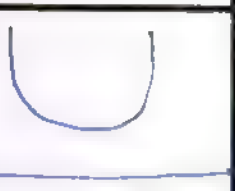
Other → Inverted U-hypothesis



Eg. Economic Survey ⇒ FLFPR declines due to increasing participation of women in education.

Steps to improve
- → Overcoming disparity in opportunities and employment.
- → Bridging the gender gap.
- → Improving women participation in STEM courses.
- → Skilling women workforce for better avenues.
- → Implementation of POSH Act, 2013 for security of women.
- → Role of women organisation for overcoming rigid mindsets

India has taken various steps such as Stand up India, PM - Kaushal Vikas Yojana, etc. for increasing FLFPR to realizing the goal of economic growth. (1% increase in GDP (GMF))

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13. फसल कटाई के बाद की मूल्य श्रृंखला में अक्षमताओं के कारण लघु और सीमांत किसानों की आजीविका पर अत्यधिक प्रतिकूल प्रभाव पड़ने के साथ-साथ फसल की हानि हो रही है। भारत के संदर्भ में चर्चा कीजिए। इन चिंताओं को दूर करने के लिए सरकार ने क्या कदम उठाए हैं?

The inefficiencies in post-harvest value chain are leading to crop losses, with significant adverse impact on the livelihood of small and marginal farmers. Discuss in the context of India. What steps has the government taken to address these concerns? (Answer in 250 words) 15

According to NITI Aayog, post-harvest value losses in India amounts to ~92000 crores which reduces the income of farmers.

Inefficiencies in post-harvest value chain are due to :-

- Poor storage facility availability.
  - Eg Less than 30% markets in Maharashtra have grain and cold storage facilities
- Lack of transport such as all-weather roads in rural areas.
- Lack of food processing industries in nearby farms.

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Impact on Farmers.

Economic Impact → Decline in Farm Income due to wastage.

- Increases cost of production of farmers due to increase in input cost
- Poor investment in agriculture leading poor production and productivity
- Distressed sale by farmers

Social Impact → ~~Increase in~~ Decline in Standard of living

- Increases inequality among farmers such as big and small farmers
- Poor social indicators such as health, education due to reduced income
- Fuels migration leading to impact on urban areas.

Steps taken to address the issue

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→ Agriculture infrastructure fund for creating facilities such as storage, etc.

→ PM-Gram Sadak Yojana for providing all weather connectivity.

→ PM-~~Food~~ Kisan Sampada Yojana for establishing food processing industries.

→ Kisan Rail for transporting farmer's produce.

→ Krishi UDAN for perishable products.

→ e-NAM for diversification of market

→ e-NWR for storage.

In Budget 2023-24, steps such as Agriculture Accelerator fund for agri-startups, agriculture digital infrastructure, etc has been taken for improving post-harvest supply chain for realising the goal of doubling farmer's income.

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14. ऊर्जा क्षेत्रक के संदर्भ में डीकार्बोनाइजेशन, विकेंद्रीकरण और डिजिटलीकरण की प्रवृत्तियां तेजी से उभर रही हैं। चर्चा कीजिए।

When it comes to the energy sector, the trends of decarbonisation, decentralisation and digitisation are fast emerging. Discuss. (Answer in 250 words) 15

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15. भारत में रासायनिक आपदाओं को कम करने संबंधी चुनौतियों पर चर्चा कीजिए। इन चुनौतियों का समाधान कैसे किया जा सकता है?

Discuss the challenges in mitigating chemical disasters in India. How can these challenges be addressed? (Answer in 250 words) 15

India had witnessed chemical disasters such as Bhopal Gas Tragedy in 1984, Vishakhapatnam gas leak in 2020, etc. leading to loss of lives and damage to environment.

Challenges in mitigating chemical disasters

→ Lack of infrastructure availability for continuous monitoring.

→ Poor regulatory compliance creating problems in managing and mitigating.

→ Lack of ~~upto~~ upto mark international standards leading to companies involving in corrupt practices.

→ Not following Environmental and social

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Impact Assessment.

→ Man-power shortage leading to poor administration

Due to all these challenges, India had witnessed chemical disasters, which can be tackled through following steps:-

Steps → Better monitoring of regulations for ensuring compliance.

→ Overcoming man power shortage by filling vacancies.

→ Making standards at par with international level

→ Strict penalty and punishment for violation of laws by companies

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→ Doing EIA and SIA for reducing risks.

→ Empowering local communities, civil societies by capacity building.

India had taken many steps such as formation of laws, policies, etc. for reducing the menace of chemical disasters.

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16. जलवायु क्षतिपूर्ति (क्लाइमेट रेपरेशन) के विचार से आप क्या समझते हैं? इस विचार को वर्तमान संदर्भ में लागू करने की आवश्यकता पर चर्चा कीजिए। इसके कार्यान्वयन के समक्ष आप क्या चुनौतिया देखते हैं?

What do you understand by the idea of climate reparations? Discuss the need to implement this idea in the current context. What are the challenges you foresee in its implementation? (Answer in 250 words) 15

Climate reparation is the concept in which more emphasis is given on nature-based solutions along with better mitigation and adaptation for increasing resilience.

Need of Climate Reparations

→ Global Boiling ⇒ The world has entered into the phase of boiling with increased temperature.

eg Recent Heatwaves across Europe.

→ Increase in frequency of extreme weather events.

eg IPCC's 6th AR highlighted increase in occurrence

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of Cyclone, El-Nino, etc.

→ Huge cost due to increasing disaster.

eg India lost 5.3% of GDP due to disaster in 2013 (World Bank)

→ Declining productivity and production of agriculture leading Food insecurity

→ Extinction of biodiversity.

Challenges in its implementation

→ Lack of cooperation among countries

eg Developed countries not giving funds from developing countries

→ Huge dependence on fossil fuels.

eg India's 53% energy needs through coal.

→ Lack of technology with developing countries

eg Many countries such as India, Bangladesh etc. do not accessibility to green technologies

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→ Trust deficit between countries at global level.

Steps which can be taken to overcome,

- → Transition to Renewable energy by providing technology.
- → Releasing climate fund of 100 billion USD and respecting CBDR - CR
- → Investing in climate - resilient agriculture
- → Achieving the goals of Sendai Framework

India has invested in climatic separations such as NICRA, Organic Farming, NAPCC, etc. for decreasing vulnerability. The world also needs to take active under SDG 13: Climate action.

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17. अदृश्य युद्ध (इनविजिबल वारफेयर) क्या है? भारत की सुरक्षा के समक्ष उत्पन्न होने वाली चुनौतियों को ध्यान में रखते हुए, अदृश्य युद्ध के खतरे से निपटने के लिए उठाए गए कदमों पर चर्चा कीजिए।
What is invisible warfare? Keeping in view the challenges it poses to India's security, discuss the steps that have been taken to tackle the menace of invisible warfare. (Answer in 250 words) 15

Invisible warfare is the new form of warfare which differs from traditional warfare of using guns, missiles, etc. It involves cyber warfare, biological threats, etc.

Challenges posed to India's security by Invisible warfare :-

→ Increased vulnerability of critical information infrastructure.

eg Attack on Kundankulam Nuclear Power Plant

→ Difficult to manage due to its invisible nature.

→ Complex form which can not be tackled through traditional approach

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→ Huge infrastructure is needed to tackle it leading to increased expenditure

eg Investing in cyber technology, etc.

To tackle the menace, various steps have been taken, such as:-

Steps
- → National Cyber Security Strategy
- → Formation of C-DAC
- → ONE-Health approach for dealing biological disaster.
- → Cyber-Surakshit Bharat Initiative

These steps have helped in tackling the invisible warfare such as:-

→ Better monitoring with the help of C-DAC

→ Increased awareness among citizens about invisible cyber warfare.

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→ Strategy for dealing in case of attack.

→ Increased research for enduring threats.

However some more steps needs to taken for tackling invisible warfare :-

↳ Implementing recommendations of Kulshan committee such as

- Better coordination
- Reducing import dependence
- Investing in local production
- Formation of Digital Arms Force

India, with increasing technology, needs to update its strategy to tackle the issue of invisible warfare for achieving the goal of New and Developed India by 2047

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18. भारत की राष्ट्रीय सुरक्षा को बनाए रखने में भू-स्थानिक डेटा और संबद्ध तकनीकों के महत्व पर चर्चा कीजिए।

Discuss the significance of geospatial data and associated technologies in safeguarding the national security of India. (Answer in 250 words) 15

Recently, India launched National Geospatial data Policy for utilising it in border management, disaster preparedness, etc.

Significance of Geospatial data

→ Better resource mapping with the help of access to geospatial data.

eg National Aquifer Mapping for ground water.

→ Help in better management of border. as India has diverse condition on border area.

eg Desert and Mountains on North west, Hilly and diverse border on North East, etc

→ Improved monitoring of coastal area

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as it has 7517 km long coastline

Eg. Use of OCEAN SAT for monitoring ocean

→ Associated Technologies

→ Geographic Information System which can provide details of geographic feature

→ Satellite technology which can keep monitoring borders and also provide strategic benefits.

Eg. NaVIC for better communication, RISAT etc.

Though, it can help in safeguarding national security but some other measures such as:

→ Well demarcated borders with neighbouring

→ Increased patrolling to check illegal infiltration, migration, etc.

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→ Better coordination among the security forces and ministries

Seeing the position of India, it is a welcome step for using geo-spatial tech. for managing national security. but other steps must also be taken for hollistic management.

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19. शिक्षा में कृत्रिम बुद्धिमत्ता (AI) का अनुप्रयोग पारंपरिक शिक्षण विधियों में कैसे क्रांति ला सकता है और छात्रों के लर्निंग आउटकम्स में सुधार कर सकता है? व्याख्या कीजिए।

How can the application of artificial intelligence (AI) in education revolutionize traditional teaching methods and improve student-learning outcomes? Explain. (Answer in 250 words) 15

Artificial Intelligence is the branch of computer science which works on mimicking the human intelligence

It can revolutionize the traditional teaching methods in the following way:

→ Introduce innovative ways of learning by audio-visual mean

eg Edu comp smart classes

→ Remove the language barrier in learning.

eg Education can be provided in mother tongue

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→ Increase the analytical ability of students and remove rote-learning.

→ Regular updated content through AI can make students competitive at global level.

Improving learning outcomes:-

→ Better understanding through audio-visual leading to better outcomes.

→ Quality education will overcome the problem of learning poverty

→ Bring interest among students leading to increased attendance and outcomes

However, there are certain problems which are:-

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Challenges → Big digital divide

eg Only 30% internet connections in rural area (NSS)

→ Lack of infrastructure in schools

eg Only 44% have computer facilities (Ministry of Education)

→ Huge cost leading to exclusion of many.

To overcome these, various efforts such as BharatNet for bridging digital divide, PPP for infrastructure, etc. have been taken along with National Education Policy 2020 for achieving SDG4: Quality Education.

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20. भारत में परमाणु प्रौद्योगिकी के विकास में होमी जहांगीर भाभा का योगदान क्या है? क्या आपको लगता है कि भारत को अपनी ऊर्जा सुरक्षा सुनिश्चित करने के लिए परमाणु ऊर्जा के विकास को प्राथमिकता देनी चाहिए?

What are the contributions of Homi Jahangir Bhabha in the development of nuclear technology in India? Do you think India should prioritise the development of nuclear energy to ensure its energy security? (Answer in 250 words) 15

Homi Jahangir Bhabha was a nuclear physicist who made enormous contribution in the development of nuclear technology, earning him the title of 'Father of Indian Nuclear Programme'

Contributions

→ After returning from foreign, he pursuaded Jamshed R.D Tata, leading to establishment of Tata Fundamental Research Institute.

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→ He pleaded for investing in nuclear technology for defence as well as energy security for India.

→ Due to his continuous efforts, Jawaharlal Nehru, the then Prime Minister established an Institute with Bhabha being its chairman.

→ Developed three-stage nuclear plan for India.

→ After his death, Institute came to known as Bhabha Atomic Research Centre.

For achieving, energy security and net zero by 2070, India needs to promote development of nuclear energy.

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It will help in :-

1. Reducing import dependence and supply chain disruptions

   eg India is the second largest importer of oil

2. Reduce carbon emissions as being a clean source and reduce dependence on thermal power plants.

3. Huge amount of energy produce.

However, there are some issues :-

- Safety issue due to reactor melt-down or damage by disaster.

  eg Chernobyl Disaster, Fukishima (Japan), etc

- Low uranium reserves available.

India can invest in small modular reactors, utilise thorium reserves (monazite in Kerala), and diversify supply chain for energy security and achieve the dream of Homi Bhabha

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